

ABSTRACT

Title: The effect of menstrual cycle phases on muscle tone

Goals and methods: The aim of this thesis is to prove the effect of menstrual cycle phases and participating hormones on the viscoelastic properties of the skeletal calf muscle via the non-invasive myotonometer device. The research part of this thesis is a pilot study in which participated seven female probands aged inbetween 24 to 28. Each proband participated in four weekly tests. Only probands who had not used hormonal contraception for at least six months were selected.

Results: The results of the tests are represented in graphs picturing parts of curves representing the force caused by the tip of the myotonometer. The muscle soleus tension is changing throughout the menstrual cycle but its impossible to eliminate other endogenous and exogenous factors. The measured relative values of muscle tension are different for each proband. The menstrual phase has the highest average value of muscle tension. However, it is not possible to make a generally valid conclusion.

Key words: Menstrual cycle, menstrual phase, muscle tone, calf muscle, biomechanical properties, myotonometry, contraception